

## A NEW GENUS AND SPECIES OF PUFFERFISH (TETRAODONTIDAE) FROM JAVA

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### ABSTRACT

*Javichthys kailolae*, new genus and species, is described from 12 specimens taken from depths of 62-85 m, in waters off the southern coast of Java. It differs from *Reicheltia* Hardy in having the eye adnate only dorsally, less dense though more widely distributed spination, a proportionately longer caudal peduncle, and in lacking a ventrolateral skinfold. Skull osteology is superficially similar to *Torquigener* Whitley, but differs in the more posteriorly directed sphenotic processes, longer and more slender palatines, highly pronounced medial ridge on each frontal-sphenotic recess, and a straight medial edge on each premaxillary posterior process.

Trawl fishes collected over recent years in Indonesian waters have included a number of pufferfish species hitherto unrecorded, or at best poorly known, from that region. Two of these have been discussed in a recent paper (Hardy, 1984), and a third, believed to represent a new monotypic genus and species, is described herein from twelve specimens, taken from south Javan waters.

### METHODS

Measurements were taken by dial caliper, in a manner similar to that outlined by Dekkers (1975). All measurements are from preserved specimens. Fin ray counts include all visible rays, both branched and unbranched, and fin ray lengths were measured from the embedded base. One specimen was cleared and alizarin-stained for osteological examination, those remaining being x-rayed for vertebral counts. Muscle nomenclature follows Winterbottom (1974). Specimens are deposited in the Museums and Art Galleries of the Northern Territory, Darwin (NTM), and the National Museum of New Zealand, Wellington (NMNZ).

### *Javichthys* new genus

*Diagnosis and Description.*—Same as for *J. kailolae* new species.

*Type Species.*—*J. kailolae* new species described herein.

*Etymology.*—The genus is named for the island of Java, off the southern coast of which the type, and only known, examples have been taken.

*Remarks.*—The overall appearance of *J. kailolae* is somewhat reminiscent of *Reicheltia halsteadii*, particularly in the head and snout region, where only limited development of the protractor hyoidei muscle has resulted in a receding chin profile. Nevertheless, some body characters and proportions of the former show significant differences, and in fact the dorsal craniology of *J. kailolae* has a greater similarity to *Torquigener* Whitley, than to other genera.

Morphologically, *Javichthys* differs from *Reicheltia* in having the eye adnate only dorsally, and lacking a ventrolateral skinfold. In addition, the dorsal and anal fins are more pointed, and the caudal peduncle considerably longer and more slender in *Javichthys*. Whereas the body spines are restricted to two dense patches on the nape and belly in *Reicheltia*, those of *Javichthys* are sparsely distributed, extending on the dorsum from the snout to the dorsal fin base, and on the ventrum from behind the chin to the vent. A few scattered spines also occur on the flanks and cheeks.

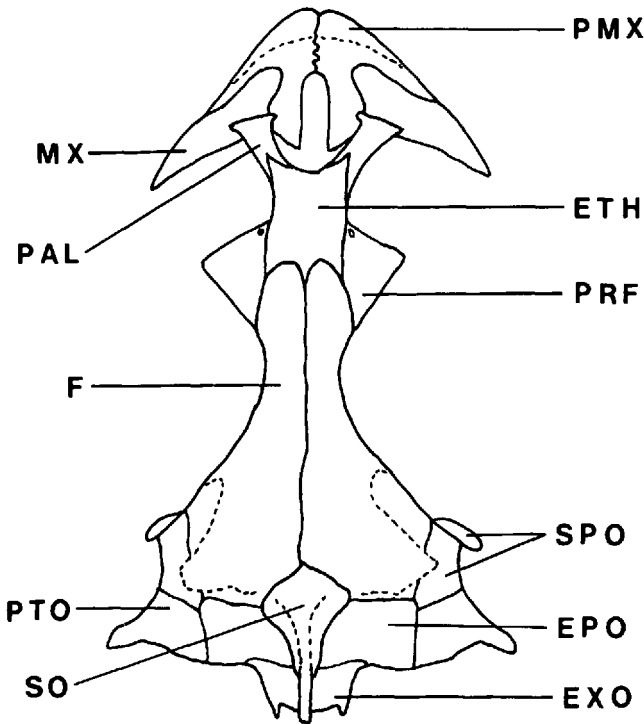


Figure 1. Skull of *Javichthys kailolae* n. sp. (NMNZ P.15176, Paratype).

The skull of *Javichthys* (Fig. 1) has the frontals narrowly concave over the interorbit, although a slight broadening occurs at the posterior of the prefrontal base, with an anterior extension to the mid-region of the prefrontals. The frontals of *Torquigener* are similarly narrow over the interorbit, and anteriorly extended (Hardy, 1983), but do not broaden between the prefrontals. By comparison, in *Reicheltia* the frontals are broad across the interorbit, and extend well forward of the prefrontals. The latter element is triangular in dorsal profile in both *Torquigener* and *Javichthys* (proportionally smaller in *Javichthys*), but rounded in *Reicheltia*. All three genera have the sphenotic excluded from the supraoccipital by frontal-epiotic contact, and medial prootic prongs are absent (but present in *T. flavimaculosus* (Hardy and Randall, 1983)). Triturating teeth are absent in *Javichthys* and *Reicheltia*, but may occur in *Torquigener*, and palatine-prefrontal contact, which similarly does not occur in the two former genera, is known in some *Torquigener* species (Hardy, 1983). Notable departures in *Javichthys* from *Torquigener* craniology include more backwardly directed lateral flanges of the sphenotics, proportionally longer and more slender palatines, and strikingly more pronounced medial ridges on the frontal-sphenotic recesses which receive the dilatator operculi muscle origins. Posterior to the region of interdigitation, the medial aspects of the premaxillaries in *Javichthys* are straight, unlike the distinctly concave structures found in related genera. This appears to be a uniquely derived condition in *Javichthys*.

The first pharyngobranchial of *Javichthys* is similar to that of *Torquigener*, being broadly curved and bearing many minute teeth. The bulbous teeth of the second and third pharyngobranchials number 12 and 7-8 respectively (cf. 11-17

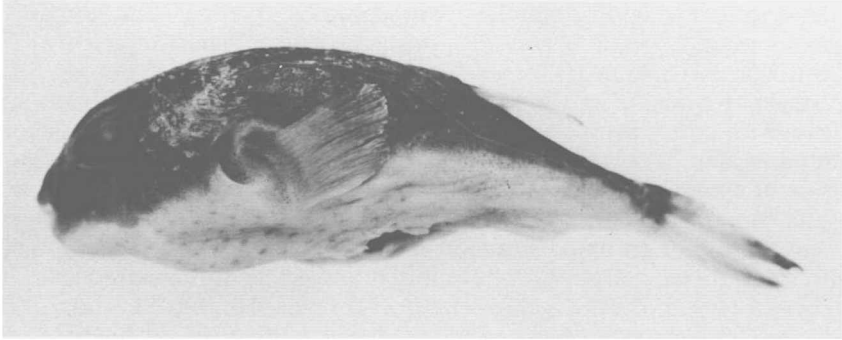


Figure 2. *Javichthys kailolae*, 62.7 mm SL, NMNZ P.15175, Serpent Bank, Bali Strait, Holotype.

and 4–12 in *Torquigener*, and 16 and 12 in *Reicheltia*). Dorsal and ventral hypohyals are present, and an interhyal absent in all three genera. The axial and caudal skeletons of *Javichthys* and *Reicheltia* are very similar, with short, broad neural spines on the preural vertebrae, resulting in a very slender caudal peduncle.

***Javichthys kailolae* new species**  
**Figures 1 and 2**

**Material Examined.**—Holotype, NMNZ P.15175, 62.7 mm SL, Serpent Bank, Bali Strait, 8°33'S, 114°31'30"E, 62–68 m, T. Gloerfelt-Tarp on BAWAL PUTIH II, 18 May 1983 (ex TGT 2599).

**Paratypes.**—NMNZ P.15176, 59.9 mm SL, off southern Java, 7°59'S, 108°58'E, 85 m, T. Gloerfelt-Tarp on BAWAL PUTIH II, 16 May 1983 (ex TGT 2574) (cleared and stained); NMNZ P.16028 (4), 54.7–57.8 mm SL, data as for NMNZ P.15176; NMNZ P.16029 (3), 62.2–64.7 mm SL, data as for holotype; NTM S.11004-002 (2), 60–61 mm SL, off southern Java, 7°58'S, 109°20'E, 70 m, T. Gloerfelt-Tarp on BAWAL PUTIH II, 16 May 1983 (ex TGT 2582); NTM S.10995-007, 68.3 mm SL, data as for holotype.

**Diagnosis.**—A monotypic genus and species of tetraodontid fishes, with the following combination of characters: nasal organ with two small, almost equally sized openings; eye rim adnate only dorsally; top of pectoral fin base below lower margin of eye; ventrolateral skinfold absent; spines moderately sparse, on dorsum, ventrum and sides; frontals narrow over interorbit; sphenotic not contacting supraoccipital; medial edges of premaxillaries straight posterior to interdigitation; palatines not in contact with prefrontals; triturating teeth absent.

**Description.**—The following meristic counts and proportions are for the holotype (62.7 mm SL) and, in parenthesis, 10 paratypes (54.7–68.3 mm SL). Dorsal rays 9 (8–9); anal rays 6 (6); pectoral rays 17/17 (16–17); caudal rays 11 (11); vertebrae 8 + 11 (8–9 + 11).

Body elongate, rounded dorsally and somewhat flattened ventrally, tapering to narrow caudal peduncle. Head length 2.6 (2.6–2.7) in SL; snout to anterior of vent 1.6 (1.5) in SL, to origin of dorsal fin 1.5 (1.4–1.5) in SL, to origin of anal fin 1.4 (1.3–1.4) in SL, to origin of pectoral fin 2.4 (2.3–2.4) in SL; body width at base of pectoral fin 3.7 (3.2–3.9) in SL; depth from dorsal fin origin to anal fin origin 4.9 (5.1–6.2) in SL; depth of body at posterior of dorsal fin 7.0 (6.7–8.4) in SL; caudal peduncle length 3.6 (3.7–4.2) in SL; least depth of caudal peduncle 14.3 (13.9–14.9) in SL.

Mouth small, terminal, width 3.7 (3.4–3.9) in HL. Lips moderately thick, covered with numerous, short papillae. Chin lacking. Nasal organ short, thickened

papilla, anterior to eye, with 2 small, widely separated openings. Snout to anterior edge of nasal organ 3.3 (2.6–3.4) in HL; posterior edge of nasal organ to anterior edge of eye 7.5 (7.1–8.4) in HL.

Eye somewhat elongate and moderate in size, dorsal rim only elongate, upper border level with dorsal profile and lower border well above level of mouth corner, horizontal diameter 3.1 (3.2–3.6) in HL. Anterior margin of gill opening smooth.

Posterior of eye to dorsal corner of gill opening 2.9 (2.6–2.8) in HL. Pectoral fin margins rounded; 1st ray very short; maximum length of fin from base 5.1 (4.9–5.7) in SL; top of fin base below lower margin of eye. Dorsal fin based about level with vent, distal margin bluntly pointed and well short of caudal fin base, longest ray 4.8 (4.9–5.6) in SL, base length 13.9 (14.7–16.7) in SL and 2.9 (2.8–3.1) in longest ray. Anal fin base below posterior half of dorsal fin base, distal margin bluntly pointed, extending beyond dorsal fin, but well short of caudal fin base, longest ray 6.3 (6.5–7.8) in SL, base length 31.4 (24.0–28.1) in SL and 5.0 (3.5–4.2) in longest ray; caudal fin truncate, 4.0 (3.9–5.4) in SL.

Ventrolateral skinfold absent. Lateral line encircling eye with an anterodorsal branch almost meeting mid-dorsally anterior to nasal organ, and a preopercular branch dropping almost to bottom of pectoral fin base; dorsolateral branches of lateral line above pectoral fin base almost meeting in midline; lateral line continuing to caudal fin base; second lateral line dropping behind mouth corner, indistinct on belly, continuing along ventrolateral aspects of caudal peduncle. Body spines short, 2-rooted, sparsely scattered on dorsum from snout to dorsal fin, on ventrum from behind chin to vent, and on cheeks and flanks to just before dorsal fin.

*Color in Alcohol (Holotype).*—Dorsum uniform brownish-grey, extending two-thirds down cheek, and half-way down sides, thereafter abruptly white; lips and belly white, with small grey specks on chin and ventral surface of caudal peduncle; caudal and dorsal fins greyish, darkening distally, other fins colorless.

*Distribution.*—Known only from the southern coast of Java, from 62–85 m.

*Etymology.*—The species is named for Patricia Kailola, in recognition of her interest in, and contribution to knowledge of, Indo-Pacific fishes.

*Remarks.*—Nothing is known of the biology of this species.

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